

Amendments to the Claims

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Original) A transposable element comprising at least four inverted repeats, forming at least two pairs of opposing pairs of inverted repeats, the element comprising DNA for insertion into a host genome, the DNA being located between two pairs of opposing repeats such that excision by a transposase or transposases of said pairs, *in situ*, is effective to be able to leave said DNA integrated into the host genome, without the presence of flanking transposon-derived repeats derived from said transposable element.
2. (Currently amended) ~~A~~The transposable element according to ~~of~~ claim 1, wherein the DNA for insertion into a host genome is a gene for expression in the host.
3. (Currently amended) ~~A~~The transposable element according to ~~of~~ claim 1, wherein the DNA for insertion into a host genome is a promoter or enhancer sequence.
4. (Currently amended) ~~A~~The transposable element according to ~~of~~ claim 1, wherein the DNA for insertion into a host genome is a stop codon or is sufficient to bring about an in frame stop codon.
5. (Currently amended) The transposable element of claim 1~~A transposable element according to any preceding claim~~, wherein the inverted repeats are piggyBac repeats.
6. (Currently amended) The transposable element of claim 1~~A transposable element according to any preceding claim~~, having four inverted repeats.

7. (Currently amended) The transposable element of claim 1A ~~transposable element according to any preceding claim~~, wherein the inverted repeats are homologous.
8. (Currently amended) The transposable element of claim 1A ~~transposable element according to any of claims 1-6~~, wherein pairs of homologous inverted repeats are heterologous to other pairs of inverted repeats.
9. (Currently amended) The transposable element of claim 1A ~~transposable element according to any preceding claim~~, wherein one or more of the inverted repeats is a minimal non-terminal repeat.
10. (Currently amended) The transposable element of claim 1A ~~transposable element according to any preceding claim~~, comprising at least one genetic marker.
11. (Currently amended) The transposable element of claim 1A ~~transposable element according to any preceding claim~~, wherein the element comprises two external, opposed inverted repeats, one on each side of an inversion cassette, the cassette comprising[[:]]:
- the DNA for insertion into a host genome, two inverted cassette repeats and two inversion sites, the DNA for insertion into a host genome being flanked on either side by one of the inverted cassette repeats, each inverted cassette repeat being further flanked by an inversion site;
- the cassette being capable of inversion within the transposed element *in situ* in the presence of a recombinase, such that following inversion, the two inverted cassette repeats flanking the DNA for insertion into a host genome each separately form a further pair of opposing inverted repeats with one of the external inverted repeats, the further pairs of opposing repeats being excisable by a transposase *in situ* to leave said DNA without flanking transposon-derived repeats in the host genome.
12. (Currently amended) ~~A~~The transposable element according to claim 11, wherein the inversion sites are recognised by inversion-inducing recombinase.

13. (Currently amended) ~~A~~The transposable element ~~according to~~of claim 12, wherein the inversion sites are recognised by the Flp/FRT or Cre/lox inversion systems.

14. (Original) A transposable element comprising at least three inverted repeats, at least one of which is inverted in relation to the others, wherein at least one non-terminal repeat is a minimal repeat.

15. (Currently amended) ~~A~~The transposable element ~~according to~~of claim 14, comprising DNA for insertion into a host genome located between the minimal repeat and a repeat having the same orientation as the minimal repeat.

16. (Currently amended) The transposable element of claim 14~~A transposable element according to claim 14 or 15~~, wherein the DNA for insertion into a host genome is preferably flanked by two pairs of opposing repeats excisable by a transposase *in situ* to leave said DNA without flanking repeats in the host genome.

17. (Currently amended) ~~A~~The transposable element ~~according to~~of claim 16, wherein each of the repeats bounding the DNA for insertion into a host genome is a minimal repeat.

18. (Currently amended) The transposable element of claim 14~~A transposable element according to any of claims 14-17~~, wherein at least one repeat distal to the DNA for insertion into a host genome in relation to a minimal repeat in the same orientation has an internal deletion or is otherwise compromised over up to 50% of its length.

19. (Currently amended) ~~A~~The transposable element ~~according to any of claims claim 10 and 14-18~~, comprising at least one genetic marker associated with an identifiable step in the transposition/excision process.

20. (Currently amended) ~~A~~The transposable element ~~according to~~of claim 19, wherein the marker is associated with the DNA for insertion into a host genome.

21. (Currently amended) ~~A~~The transposable element ~~according to any of claim~~
~~claims~~14-19, comprising as a terminal repeat, a repeat having a deletion of no more
than 50%, or mutation or inversion that disables no more than 50% of the repeat.
22. (Currently amended) ~~A~~The transposable element ~~according to any preceding~~
~~of~~ claim 1, wherein the element is a class II transposable element.
23. (Currently amended) ~~A~~The transposable element ~~according to any~~
~~preceding of~~ claim 1, wherein the transposase is encoded within the transposon.
24. (Currently amended) A method for transforming an organism, comprising
exposing replicative tissue of the organism to an element ~~according to any preceding~~
~~of~~ claim 1 under conditions effective to incorporate the element into the genome
thereof and, subsequently or simultaneously therewith, providing conditions suitable
to excise a transposon from the genome, and selecting an organism, or tissue
therefor, comprising the DNA intended for insertion lacking repeats in at least one
orientation.
25. (Currently amended) ~~A~~The method ~~according to of~~ claim 24, wherein the
transformant organism is exposed to a source of active transposase.
26. (Currently amended) ~~A~~The method ~~according to of~~ claim 25, wherein the
source of active transposase comprises a helper plasmid or RNA encoding the
transposase, or a transposase protein or integrated transposase source.
27. (Currently amended) A transformant organism obtained in accordance with
~~any of claims~~ claim 24-26.
28. (Currently amended) ~~A~~The transformant organism ~~of according to~~ claim 27,
wherein the organism is an insect.
29. (Currently amended) ~~A~~The transposable element ~~according to any of claims~~
claim 10 ~~and 19-20~~, wherein the marker is a conditional lethal.

30. ~~A~~The transposable element ~~according to any of~~ claim 12, wherein the inversion sites are recognised by a directional recombinase, the recombinase-mediated inversion being essentially irreversible.

31. ~~A~~The transposable element ~~according to any of~~ claim 30, wherein the inversion site is lox66 or lox71.